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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,348	11/07/2005	Gregory C. Roberts	15670-054US1 SD2002-186	5044
20985	7590	12/28/2009	EXAMINER	
FISH & RICHARDSON, PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			PAJOOHI, TARA S	
			ART UNIT	PAPER NUMBER
			2886	
			NOTIFICATION DATE	DELIVERY MODE
			12/28/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

**Supplemental  
Notice of Allowability**

Application No.

10/528,348

Examiner

Tara S. Pajoochi

Applicant(s)

ROBERTS ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 6/24/2009.
2. ☒ The allowed claim(s) is/are 1-7,9-16,18-24 and 27-50.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date ____     | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

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## DETAILED ACTION

### *Response to Amendment*

1. Acknowledgment is made to the amendment filed on 6/24/2009.

## EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Bing Ai on Wednesday, November 04, 2009.

The application has been amended as follows:

**Please CANCEL claims 25 and 26.**

Claim 27:

**--A method comprising:**

**directing an aerosol flow through a cloud condensation nuclei chamber to**

**grow particles due to condensation from supersaturation; and**

**controlling a temperature profile of the cloud condensation nuclei chamber**

**along the aerosol flow to produce a nearly constant supersaturation along the**

**cloud condensation nuclei chamber;**

**wherein a temperature of the cloud condensation nuclei chamber increases**

**monotonically along the direction of the aerosol flow.—**

***Allowable Subject Matter***

3. Claims 1-7, 9-16, 18-24 and 27-50 are allowed.

4. The following is an examiner's statement of reasons for allowance:

As for claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious a CCN chamber vertically arranged to receive aerosol flow from the top and flows downward along the direction of gravity to the outlet engaged to a thermal control to produce a monotonic thermal profile and a monotonic temperature gradient in a stream-wise direction of the aerosol flow from the input to the output of the CCN chamber, in combination with the rest of the limitations of the claims.

As for claim 9, the prior art of record, taken alone or in combination, fails to disclose or render obvious a CCN measuring apparatus having a chamber vertically arranged to receive aerosol flow from the top and flows downward along the direction of gravity to the outlet engaged to a heating system to produce a linearly increasing temperature gradient along the axis of the chamber in the direction of flow and a monotonic thermal profile in a stream-wise direction of the aerosol flow to effectuate a nearly constant temperature along the chamber, in combination with the rest of the limitations of the claims.

As for claim 19, the prior art of record, taken alone or in combination, fails to disclose or render obvious a thermal gradient diffusion chamber for inclusion in a CCN measurement apparatus wherein a flow control mechanism coupled to the CCN column to direct the sheath flow to flow along inner surfaces of the CCN column to keep the aerosol flow away from the inner surfaces, a humidifier to control the humidity in the sheath flow, and a heat source to create an increasing

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temperature gradient and a monotonic thermal profile in the direction of flow of the aerosol flow in the chamber, in combination with the rest of the limitations of the claims.

As for claims 22 and 27, the prior art of record, taken alone or in combination, fails to disclose or render obvious a system and method for conditioning a sample in a CCN measuring apparatus, by subjecting a sample through the CCN column such that the increasing temperature gradient in the direction of the sample flow and a monotonic thermal profile in a stream-wise direction of the sample flow to produce a substantially supersaturation, in combination with the rest of the limitations of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid proceeding delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statements of Reasons for Allowance."

#### ***Cited Prior Art***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schildmeyer et al. (U.S. Patent No. 5,675,405) teaches a system and method for measuring particles in a CCN by employing supersaturation due to temperature control.

#### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tara S. Pajoohi whose telephone number is (571)272-9785. The examiner can normally be reached on Monday - Thursday 9:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur R. Chowdhury can be reached on 571-272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tara S. Pajoochi

Patent Examiner

TSP

/TARIFUR R CHOWDHURY/

Supervisory Patent Examiner, Art Unit 2886